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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/625,900

07/24/2003

Hwan-Guem Kim

1293.1781

1198

21171

7590

03/31/2005

STAAS & HALSEY LLP

SUITE 700

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WASHINGTON, DC 20005

EXAMINER

BEATTY, ROBERT B

ART UNIT

PAPER NUMBER

2852

DATE MAILED: 03/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/625,900

Applicant(s)

KIM ET AL.

Examiner

Robert Beatty

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-3,7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (EP 1,217,466 A1) in view of Namiki et al.

Lee (EP) teach a fusing device for an electrophotographic imaging device comprising a fusing roller 210 including a heating pipe 262 disposed in the center of the fusing roller, a heating element 213/212 disposed around the heating pipe in order to generate heat, and a Teflon protective outer layer (see Fig.5 and paragraphs 37-40). A pressure roller 230 will press against the fusing roller in order to form a nip and wherein a paper having an unfused toner image will be passed into the nip so that the toner image is fused by heat and pressure. The heat pipe 262 is sealed and a working fluid 214 is stored within the heat pipe. Specifically, Lee (EP) teach everything claimed except the outer layer being a silicone rubber.

Namiki et al. teach a fixing device having a heating roller 1 having a heated working fluid 5 in the interior of the heating roller and an outer layer of silicone rubber (col. 3, lines 25-31) excellent in surface lubrication. It would have been obvious to one of ordinary skill in the art at the time the invention was made to

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substitute a silicone rubber layer for the outer protective layer in Lee because the heating roller will have excellent surface lubrication as taught in Namiki et al.

2. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Namiki et al. as applied to claims 1-3,7 above, and further in view of Hirst et al.

The combination of Lee in view of Namiki et al. taught supra discloses most of what is claimed except the silicone rubber layer having a thickness between 1-3 mm, and the diameter of the fusing roller being between 35-50 mm.

Hirst et al. teach a fusing device comprising a fusing roller 336 and a pressure roller 338 forming a nip with the fusing roller. A silicone rubber outer layer having a thickness of 2.5 mm is an outside layer of the fusing roller. The fusing roller has a diameter of 45 mm plus 2.5 mm for the silicone rubber layer (col.5, lines 24-39). It would have been obvious to one of ordinary skill in the art at the time the invention was made that the fusing roller in Lee (EP) would have a diameter within applicant's claimed range because this diameter size is known in the state of the art for the purpose of fusing the toner image without making the image forming apparatus too large.

3. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Namiki et al. as applied to claims 1-3,7 above, and further in view of Moriyama(JP# 59-204071).

Lee in view of Namiki et al. taught supra discloses most of what is claimed except the outer surface layer being adhesively attached to the heater with a heat resistant adhesive. Moriyama (JP) teach a fixing device having a heat roller 21 which comprises an aluminum core 22 heated by a heater inside the core, and a Teflon or silicone rubber outer layer 23 over the core. The outer layer is adhesively secured to the core with an adhesive coating therebetween. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use an adhesive layer to secure the outer layer to the inner core heater because the outer layer can be adequately adhered and will not readily come off the core during normal fixing operations. It is noted that the adhesive coating has some heat resistance (i.e. it is not a perfect thermal conductor).

4. Applicant's arguments filed 12/20/2004 have been fully considered but they are not persuasive.

The applicant states that the examiner takes Official Notice of 1) the diameter of the fusing roller, 2) the use of a silicone rubber layer and 3) the use of a heat resistive adhesive to secure the layers of the heating roller. However, upon review of the previous office action, the examiner has only taken Official Notice

with regard to difference 3). The other two differences have been rejected under 35 U.S.C. 103(a) using the Graham vs. John Deere Co. rationale. Since the applicant has challenged the Official Notice taken for difference 3), the examiner has provided a reference as per MPEP 2144.03. The examiner changed the rejection to the base claim so to show that a silicone rubber outer layer is also obvious to heat rollers that have a working fluid therein (such as the applicant's).

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Beatty whose telephone number is (571) 272-2130. The examiner can normally be reached on M-F from 9 to 6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley, can be reached on (571) 272-2136. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1782.

A handwritten signature in black ink, appearing to read 'Robert Beatty', with a long horizontal flourish extending to the right.

Robert Beatty
Primary Examiner
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